$FILE 'HOME' ENTERED AT 12:33:11 ON 14 MAY 2004

=> file agricola biosis caplus caba

=> s elicitin or (hypersensitive response elicitor)
L1 419 ELICITIN OR (HYPERSENSITIVE RESPONSE ELICITOR)

=> s l1 and promoter
L2 20 L1 AND PROMOTER

=> duplicate remove l2
L3 14 DUPLICATE REMOVE L2 (6 DUPLICATES REMOVED)

=> d ti 1-14

L3 ANSWER 1 OF 14 CAPLUS COPYRIGHT 2004 ACS on STN
TI Feedback-regulated expression system for plant transformation using an **elicitin** that induces a hypersensitive response

L3 ANSWER 2 OF 14 CAPLUS COPYRIGHT 2004 ACS on STN
TI Wheat dwarf virus promoters for gene expression in phloem and their use in improving plant disease resistance to insects

L3 ANSWER 3 OF 14 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN
TI Regulation of squalene synthase, a key enzyme of sterol biosynthesis, in tobacco.

L3 ANSWER 4 OF 14 CABA COPYRIGHT 2004 CABI on STN
TI Strategies for development of red pepper resistant to Phytophthora blight through genetic engineering.

L3 ANSWER 5 OF 14 CAPLUS COPYRIGHT 2004 ACS on STN
TI Oomycete-resistant transgenic plants by virtue of pathogen-induced expression of a heterologous **hypersensitive response elicitor**

L3 ANSWER 6 OF 14 CAPLUS COPYRIGHT 2004 ACS on STN
TI Method for delivering bacterial effector proteins into eucaryotic cells via type III secretion systems

L3 ANSWER 7 OF 14 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI **Elicitin**-mediated plant resistance.

L3 ANSWER 8 OF 14 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Internuclear gene silencing in Phytophthora infestans.

L3 ANSWER 9 OF 14 CABA COPYRIGHT 2004 CABI on STN
TI Internuclear gene silencing in Phytophthora infestans.

L3 ANSWER 10 OF 14 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN DUPLICATE 2
TI Pathogen-induced **elicitin** production in transgenic tobacco generates a hypersensitive response and nonspecific disease resistance.

L3 ANSWER 11 OF 14 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Induction of a unique sesquiterpene cyclase by secondary signals released from pathogen-challenged cells.

L3 ANSWER 12 OF 14 CAPLUS COPYRIGHT 2004 ACS on STN
TI Mapping the elicitor and necrotic sites of Phytophthora elicitins with synthetic peptides and reporter genes controlled by tobacco defense gene promoters

L3 ANSWER 13 OF 14 CAPLUS COPYRIGHT 2004 ACS on STN
TI Developmental and pathogen-induced activation of an msr gene, str246C, from tobacco involves multiple regulatory elements

L3 ANSWER 14 OF 14 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN DUPLICATE 3
TI Extracellular protein elicitors from Phytophthora: Host-specificity and induction of resistance to bacterial and fungal phytopathogens.

=> d bib abs 12 13 14 7 4 1

L3 ANSWER 12 OF 14 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1997:493947 CAPLUS

DN 127:202618
TI Mapping the elicitor and necrotic sites of Phytophthora elicitins with synthetic peptides and reporter genes controlled by tobacco defense gene promoters
AU Perez, Valerie; Huet, Jean-Claude; Nespoulous, Claude; Pernollet, Jean-Claude
CS Unite de Recherches de Biochimie et Structure des Proteines, INRA, Jouy-en-Josas, F-78352, Fr.
SO Molecular Plant-Microbe Interactions (1997), 10(6), 750-760
CODEN: MPMIEL; ISSN: 0894-0282
PB American Phytopathological Society
DT Journal
LA English
AB Elicitins are 10-kDa proteins secreted by Phytophthora and Pythium fungi that elicit a hypersensitive-like necrotic reaction, leading to resistance against fungal and bacterial plant pathogens. Induction of necrosis and resistance were previously shown to be borne by different sites of the mol. Furthermore, sequence comparison indicated several potential residues necessary for necrosis. The role of one of these residues was previously evidenced with site-directed mutagenesis. In order to locate other necrosis-determining sites and reveal the defense-eliciting sites, we synthesized a series of synthetic peptides. Tests were performed on two types of transgenic tobacco plants, both transformed with a construction containing the β-glucuronidase reporter gene, in one case controlled by the **promoter** of the multiple stimulus response gene str 246C and in the other by the **promoter** of the pathogenesis-related gene PR1a. Only certain peptides were found to be active. Whereas PR1a induction was consistently correlated with induction of necrosis, four peptides were observed to induce only str 246C expression without necrosis, which led to differentiate the defense-eliciting sites from the necrotic sites. From the structure-function relationships thus obtained, two different defense pathways were inferred to be independently induced by elicitins.

L3 ANSWER 13 OF 14 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1995:640266 CAPLUS
DN 123:193908
TI Developmental and pathogen-induced activation of an msr gene, str246C, from tobacco involves multiple regulatory elements
AU Gough, Clare; Hemon, Pascale; Tronchet, Maurice; Lacomme, Christophe; Marco, Yves; Roby, Dominique
CS Lab. Biol. Moleculaire Relations, UMR CNRS/INRA, Castanet-Tolosan, 31326, Fr.
SO Molecular & General Genetics (1995), 247(3), 323-37
CODEN: MGGEAE; ISSN: 0026-8925
PB Springer
DT Journal
LA English
AB A family of genes, the so-called msr genes (multiple stimulus response), has recently been identified on the basis of sequence homol. in various plant species. Members of this gene family are thought to be regulated by a number of environmental or developmental stimuli, although it is not known whether any one member responds more specifically to one stimulus, or whether each gene member responds to various environmental stimuli. In this report, the authors address this question by studying the tobacco msr gene str246C. Using transgenic tobacco plants containing 2.1 kb of 5' flanking DNA sequence from the str246C gene fused to the β-glucuronidase (GUS) coding region, the complex expression pattern of the str246C **promoter** has been characterized. Expression of the str246C **promoter** is strongly and rapidly induced by bacterial, fungal and viral infection and this induction is systemic. Elicitor prepns. from phytopathogenic bacteria and fungi activate the str246C **promoter** to high levels, as do wounding, the application of auxin, auxin and cytokinin, salicylic acid or copper sulfate, indicating the absence of gene specialization within the msr gene family, at least for str246C. In addition, GUS activity was visualized histochem. in root meristematic tissues of tobacco seedlings and is restricted to roots and sepals of mature plants. Finally, anal. of a series of 5' deletions of the str246C **promoter**-GUS gene fusion in transgenic tobacco plants confirms the involvement of multiple regulatory elements. A region of 83 bp was necessary for induction of **promoter** activity in response to Pseudomonas solanacearum, while auxin inducibility and root expression are apparently not controlled by this element, since its removal does not abolish either response. An element of the **promoter** with a neg. effect on **promoter** activation by P. solanacearum was also identified.

L3 ANSWER 14 OF 14 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AN 1993:211969 BIOSIS
DN PREV199395113194
TI Extracellular protein elicitors from Phytophthora: Host-specificity and induction of resistance to bacterial and fungal phytopathogens.

AU Kamoun, Sophien [Reprint author]; Young, Mary; Glascock, Christopher B.; Tyler, Brett M.
CS Cent. Eng. Plants Resistance Against Pathogens, 1920 Fifth Street, Davis, CA 95616, USA
SO Molecular Plant-Microbe Interactions, (1993) Vol. 6, No. 1, pp. 15-25. CODEN: MPMIEL. ISSN: 0894-0282.
DT Article
LA English
ED Entered STN: 23 Apr 1993
Last Updated on STN: 24 Apr 1993
AB Purified elicitor proteins (elicitins) from Phytophthora parasitica and P. cryptogea induced both localized and distal hypersensitive responses (HR) specifically in Nicotiana species and some radish and turnip cultivars but not in 12 other plant species. Differences between HR induction by acidic (parasiticein) and basic (cryptogein) isoforms were observed only for distal HR assays. Cryptogein consistently induced stronger distal necrosis in tobacco and radish than parasiticein. Similar results were obtained for the induction of a bean chalcone synthase **promoter** fused to a beta-glucuronidase reporter in a transgenic tobacco line. However, in localized infiltration assays, both **elicitin** isoforms induced necrotic HR lesions at similar levels, suggesting that the difference between acidic and basic elicitins is related to distal HR induction and not to necrogenicity per se. Induced resistance to two P. parasitica isolates was observed on tobacco after pretreatment with elicitins. In radish, elicitins induced cultivar-specific HR and resistance to the bacterial pathogen, Xanthomonas campestris pv. armoraciae.

L3 ANSWER 7 OF 14 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AN 2000:293361 BIOSIS
DN PREV200000293361
TI **Elicitin**-mediated plant resistance.
AU Chappell, Joseph [Inventor, Reprint author]; Yin, Shaohui [Inventor]; Cornett, Catherine [Inventor]
CS Lexington, KY, USA
ASSIGNEE: Board of Trustee of the University of Kentucky, Lexington, KY, USA
PI US 5981843 November 09, 1999
SO Official Gazette of the United States Patent and Trademark Office Patents, (Nov. 9, 1999) Vol. 1228, No. 2. e-file.
CODEN: OGUPE7. ISSN: 0098-1133.
DT Patent
LA English
ED Entered STN: 6 Jul 2000
Last Updated on STN: 7 Jan 2002
AB Qualitative transcriptional regulatory sequences functional in plants, plant tissue and in plant cells for inducible gene expression and quantitative transcriptional regulatory sequences for increasing the transcriptional expression of downstream genetic information in plants, plant tissue and plant cells are disclosed. Also disclosed are methods and recombinant DNA molecules for improving the disease resistance of transgenic plants, especially wherein an inducible **promoter** controls the expression of a protein capable of evoking the hypersensitive response in a plant.

L3 ANSWER 4 OF 14 CABA COPYRIGHT 2004 CABI on STN
AN 2003:178439 CABA
DN 20033153371
TI Strategies for development of red pepper resistant to Phytophthora blight through genetic engineering
AU Shin DongHyun; Yoon YongHwi; Kim KilUng; Jeong HyungJin; Lee MoonJung; Kwon TaeRyong; Hur BongGoo; Bae DoHam; Shin, D. H.; Yoon, Y. H.; Kim, K. U.; Jeong, H. J.; Lee, M. J.; Kwon, T. R.; Hur, B. G.; Bae, D. H.
CS Division of Plant Biosciences, Kyungpook National University, Daegu 702-701, Korea Republic.
SO Korean Journal of Horticultural Science & Technology, (2002) Vol. 20, No. 2, pp. 168-173. 39 ref.
Publisher: Korean Society for Horticultural Science. Suwon
ISSN: 1226-8763
CY KOREA REPUBLIC
DT Journal
LA Korean
SL English
ED Entered STN: 20031107
Last Updated on STN: 20031107
AB This paper reviews recent studies on the development of blight resistance in red pepper through genetic engineering, particularly on (1) the development of a specific **promoter** that alternatively switches on when stimulated by Phytophthora capsici infection and off when the stresses are removed, (2) the characterization of **elicitin** gene that causes hypersensitive response in red pepper when inoculated with Phytophthora spp., and (3) the establishment of plant transformation

system using a specific **promoter** fused with the **elicitin** gene.

L3 ANSWER 1 OF 14 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:155024 CAPLUS
DN 138:182060
TI Feedback-regulated expression system for plant transformation using an **elicitin** that induces a hypersensitive response
IN Hunt, Arthur G.; Li, Qingshun; Dattaroy, Tomal
PA USA
SO U.S. Pat. Appl. Publ., 16 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003040102	A1	20030227	US 2002-162214	20020605
PRAI	US 2001-295565P	P	20010605		

AB A feedback-regulated expression system for regulating the expression of genes in plants is provided. Gene constructs are described in which a nucleic acid construct comprising a first polynucleotide encoding an **elicitin** is operably linked to a first plant **promoter** comprising at least one Escherichia coli lac operator (LacO) located between the **promoter** TATA box and the translation initiation site of the first polynucleotide, wherein the first plant **promoter** is constitutive. A second polynucleotide encodes an E. coli lac repressor (LacI) operably linked to a PR (pathogen-responsive) gene. The feedback-regulated expression system links the expression of genes whose products are cytotoxic to plants to the establishment of systemic acquired resistance. The cytotoxic gene product is an **elicitin**, such as the yeast PAB1 gene or Pseudomonas syringae HrmA, that induces localized cell death or a hypersensitive response in plants. The cytotoxic gene is placed under control of a modified constitutive **promoter**, such as the CaMV 35S **promoter**, wherein the modification entails the introduction of at least one, and preferably two copies of an E. coli lac operator sequence between the TATA box and the HrmA gene. The construct is combined with one in which the lac repressor is controlled by the tobacco PR-1b gene **promoter**, although any **promoter** that is inducible by the **elicitin** encoded by the first polynucleotide may be used.

=> s l1 and erwinia amylovora
L4 25 L1 AND ERWINIA AMYLOVORA

=> duplicate remove l4
DUPLICATE PREFERENCE IS 'BIOSIS, CAPLUS, CABA'
KEEP DUPLICATES FROM MORE THAN ONE FILE? Y/(N):n
PROCESSING COMPLETED FOR L4
L5 23 DUPLICATE REMOVE L4 (2 DUPLICATES REMOVED)

=> d ti 1-23

L5 ANSWER 1 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
TI Plant receptors for hypersensitive response elicitors and uses thereof

L5 ANSWER 2 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
TI Plant receptors for **hypersensitive response** **elicitor** proteins and their use in improving plant disease resistance

L5 ANSWER 3 OF 23 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Effects of Messenger(R) on disease resistance and plant growth enhancement in strawberry and cucumber.

L5 ANSWER 4 OF 23 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI **Hypersensitive response elicitor** from **Erwinia amylovora** and its use.

L5 ANSWER 5 OF 23 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI **Hypersensitive response elicitor** from **Erwinia amylovora**, its use, and encoding gene.

L5 ANSWER 6 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
TI Treatment of fruits or vegetables with **hypersensitive response elicitor** to inhibit postharvest disease or desiccation

L5 ANSWER 7 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
TI Plant harpin-binding protein and cDNA and transgenic plants with enhanced growth and insect, disease and stress resistance

L5 ANSWER 8 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
TI Oomycete-resistant transgenic plants by virtue of pathogen-induced expression of a heterologous **hypersensitive response elicitor**

L5 ANSWER 9 OF 23 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Harpin, a **hypersensitive response elicitor** from **Erwinia amylovora**, regulates ion channel activities in Arabidopsis thaliana suspension cells.

L5 ANSWER 10 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
TI Methods of imparting stress resistance to plants with **hypersensitive response elicitor** proteins derived from fungal and bacterial pathogens

L5 ANSWER 11 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
TI Sequences encoding fragments of microbial **hypersensitive response elicitor** proteins which are active but do not elicit a hypersensitive response, and their applications in plant genetic engineering

L5 ANSWER 12 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Hypersensitive response elicitor** from **Erwinia amylovora** and its use for plant genetic engineering

L5 ANSWER 13 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Hypersensitive response elicitor** from **Erwinia amylovora** and its use for plant genetic engineering

L5 ANSWER 14 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Hypersensitive response elicitor** protein fragments and their use to enhance plant growth and protect plants from insects and disease

L5 ANSWER 15 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
TI Insect control on plants with fungal hypersensitive response elicitors

L5 ANSWER 16 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
TI Stimulating plant growth by application of hypersensitive response elicitors or by transformation with genes for their biosynthesis

L5 ANSWER 17 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
TI Hypersensitive response-induced pathogen resistance in plants by seed treatment with elicitor proteins

L5 ANSWER 18 OF 23 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Treatment of tomato seed with harpin enhances germination and growth and induces resistance to Ralstonia solanacearum.

L5 ANSWER 19 OF 23 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Effect of harpin on Arabidopsis thaliana.

L5 ANSWER 20 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
TI Hypersensitive response induced resistance in plants

L5 ANSWER 21 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
TI Developmental and pathogen-induced activation of an msr gene, str246C, from tobacco involves multiple regulatory elements

L5 ANSWER 22 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
TI Cloning of microbial gene for elicitor of the hypersensitive response in plants

L5 ANSWER 23 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
TI HrpI of **Erwinia amylovora** functions in secretion of harpin and is a member of a new protein family

=> d bib abs 9 11

L5 ANSWER 9 OF 23 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
DUPLICATE 1
AN 2001:302811 BIOSIS
DN PREV200100302811
TI Harpin, a **hypersensitive response elicitor** from **Erwinia amylovora**, regulates ion channel activities in Arabidopsis thaliana suspension cells.
AU El-Maarouf, Hayat; Barny, Marie Anne; Rona, Jean Pierre; Bouteau, Francois [Reprint author]

CS Laboratoire d'Electrophysiologie des Membranes, Universite Paris 7, 2 Place Jussieu, 75251, Paris Cedex 05, France
bouteau@ccr.jussieu.fr
SO FEBS Letters, (25 May, 2001) Vol. 497, No. 2-3, pp. 82-84. print.
CODEN: FEBLAL. ISSN: 0014-5793.
DT Article
LA English
ED Entered STN: 27 Jun 2001
Last Updated on STN: 19 Feb 2002
AB HrpN, the **hypersensitive response elicitor** from **Erwinia amylovora**, stimulated K+ outward rectifying currents in Arabidopsis thaliana suspension cells. It also decreased anion currents. These data demonstrate the ability of harpin to regulate different plasma membrane ion channels, putative components of signal transduction chains leading to defense responses and programmed cell death.

L5 ANSWER 11 OF 23 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:241283 CAPLUS
DN 132:275186
TI Sequences encoding fragments of microbial **hypersensitive response elicitor** proteins which are active but do not elicit a hypersensitive response, and their applications in plant genetic engineering
IN Wei, Zhong-Min; Fan, Hao; Niggemeyer, Jennifer L.
PA Eden Bioscience Corporation, USA
SO PCT Int. Appl., 100 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000020452	A2	20000413	WO 1999-US23181	19991005
	WO 2000020452	A3	20000706		
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	CA 2344593	AA	20000413	CA 1999-2344593	19991005
	AU 9965085	A1	20000426	AU 1999-65085	19991005
	BR 9915345	A	20010731	BR 1999-15345	19991005
	EP 1119582	A2	20010801	EP 1999-953057	19991005
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	TR 200100967	T2	20010821	TR 2001-20010096719991005	
	JP 2002526101	T2	20020820	JP 2000-574563	19991005
	ZA 2001002536	A	20011219	ZA 2001-2536	20010328
	NO 2001001729	A	20010605	NO 2001-1729	20010405
PRAI	US 1998-103050P	P	19981005		
	WO 1999-US23181	W	19991005		

AB The invention provides sequences encoding active fragments of a **hypersensitive response elicitor** protein which does not elicit a hypersensitive response in plants. Specifically, the fragments are derived from **hypersensitive response elicitor** proteins from **Erwinia amylovora** (gene hrpN) and/or Pseudomonas syringae (gene hrpZ). Isolated fragments of **hypersensitive response elicitor** proteins have the following activities: imparting disease resistance to plants, enhancing plant growth, and/or controlling insects on plants. This can be achieved by applying the fragments of a **hypersensitive response elicitor** in a non-infectious form to plants or plant seeds, or by using transgenic plants or plant seeds transformed with a DNA mol. encoding the **hypersensitive response elicitor** fragment.

=> s promoter and oomycete
L6 93 PROMOTER AND OOMYCETE

=> duplicate remove l6
L7 34 DUPLICATE REMOVE L6 (59 DUPLICATES REMOVED)

=> d ti 1-34

L7 ANSWER 1 OF 34 CAPLUS COPYRIGHT 2004 ACS on STN
TI Tobacco transgenic for the flax rust resistance gene L expresses

allele-specific activation of defense responses

L7 ANSWER 2 OF 34 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Core **promoter** structure in the **oomycete** Phytophthora infestans.

L7 ANSWER 3 OF 34 CAPLUS COPYRIGHT 2004 ACS on STN
TI 1,3-Beta-glucanases in the **oomycete** Phytophthora infestans: the genes and their regulation

L7 ANSWER 4 OF 34 CAPLUS COPYRIGHT 2004 ACS on STN
TI Protein and cDNA sequences of a novel protein kinase induced during sporangial cleavage in the **oomycete** Phytophthora infestans and use for screening fungicides

L7 ANSWER 5 OF 34 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Mitogen-activated protein kinases play an essential role in oxidative burst-independent expression of pathogenesis-related genes in parsley.

L7 ANSWER 6 OF 34 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Cell cycle regulator Cdc14 is expressed during sporulation but not hyphal growth in the fungus-like **oomycete** Phytophthora infestans.

L7 ANSWER 7 OF 34 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Transformation of Pythium aphanidermatum to geneticin resistance.

L7 ANSWER 8 OF 34 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Constitutive expression of an inducible lipoxygenase in transgenic tobacco decreases susceptibility to Phytophthora parasitica var. nicotianae.

L7 ANSWER 9 OF 34 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Characterization of 1,3-beta-glucanase and 1,3;1,4-beta-glucanase genes from Phytophthora infestans.

L7 ANSWER 10 OF 34 CAPLUS COPYRIGHT 2004 ACS on STN
TI Characterizing the stress/defense transcriptome of Arabidopsis

L7 ANSWER 11 OF 34 CAPLUS COPYRIGHT 2004 ACS on STN
TI Arabidopsis thaliana genes exhibiting expression altered by **oomycete** pathogen infection

L7 ANSWER 12 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN DUPLICATE 7
TI Altered lignin structure and resistance to pathogens in spi 2-expressing tobacco plants.

L7 ANSWER 13 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN DUPLICATE 8
TI Over-expression of a seed specific hevein-like antimicrobial peptide from pharbitis nil enhances resistance to a fungal pathogen in transgenic tobacco plants.

L7 ANSWER 14 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN DUPLICATE 9
TI Constitutive expression of phenylalanine ammonia-lyase gene from Stylosanthes humilis in transgenic tobacco leads to enhanced disease resistance but impaired plant growth.

L7 ANSWER 15 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN DUPLICATE 10
TI Over-expression of TGA5, which encodes a bZIP transcription factor that interacts with NIM1/NPR1, confers SAR-independent resistance in Arabidopsis thaliana to Peronospora parasitica.

L7 ANSWER 16 OF 34 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Oomycete**-resistant transgenic plants by virtue of pathogen-induced expression of a heterologous hypersensitive response elicitor

L7 ANSWER 17 OF 34 CAPLUS COPYRIGHT 2004 ACS on STN
TI Arabidopsis thaliana cyclic nucleotide-gated ion channel CNGC/DND and genes and their use as regulators of plant disease resistance and cell death

L7 ANSWER 18 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN DUPLICATE 11
TI A gene encoding Achlya bisexualis beta-amylase and its expression in Saccharomyces cerevisiae.

L7 ANSWER 19 OF 34 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI A gene encoding beta-amylase from Saprolegnia parasitica and its expression in Saccharomyces cerevisiae.

L7 ANSWER 20 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN DUPLICATE 13
TI A local accumulation of the Ralstonia solanacearum PopA protein in transgenic tobacco renders a compatible plant-pathogen interaction incompatible.

L7 ANSWER 21 OF 34 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Postinfection biological control of **oomycete** pathogens of pea by Burkholderia cepacia AMMDR1.

L7 ANSWER 22 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN DUPLICATE 14
TI Increased tolerance to Phytophthora citrophthora in transgenic orange plants constitutively expressing a tomato pathogenesis related protein PR-5.

L7 ANSWER 23 OF 34 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Arabidopsis dth9 mutation identifies a gene involved in regulating disease susceptibility without affecting salicylic acid-dependent responses.

L7 ANSWER 24 OF 34 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Internuclear gene silencing in Phytophthora infestans.

L7 ANSWER 25 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN DUPLICATE 17
TI Green fluorescent protein (GFP) as gene expression reporter and vital marker for studying development and microbe-plant interaction in the tobacco pathogen Phytophthora parasitica var. nicotianae.

L7 ANSWER 26 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN DUPLICATE 18
TI A peroxidase gene **promoter** induced by phytopathogens and methyl jasmonate in transgenic plants.

L7 ANSWER 27 OF 34 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN DUPLICATE 19
TI Constitutive expression of an inducible beta-1,3-glucanase in alfalfa reduces disease severity caused by the **oomycete** pathogen Phytophthora megasperma f. sp medicaginis, but does not reduce disease severity of chitin-containing fungi.

L7 ANSWER 28 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN DUPLICATE 20
TI NiaA, the structural nitrate reductase gene of Phytophthora infestans: isolation, characterization and expression analysis in Aspergillus nidulans.

L7 ANSWER 29 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN DUPLICATE 21
TI Characterization of the "**promoter** region" of the enolase-endoding gene enol from the anaerobic fungus Neocallimastix frontalis: sequence and **promoter** analysis.

L7 ANSWER 30 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN DUPLICATE 22
TI Transformation of the **oomycete** pathogen Phytophthora megasperma f. sp. glycinea occurs by DNA integration into single or multiple

chromosomes.

L7 ANSWER 31 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN DUPLICATE 23
TI Expression and antisense inhibition of transgenes in Phytophthora infestans is modulated by choice of **promoter** and position effects.

L7 ANSWER 32 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN DUPLICATE 24
TI Regulatory sequences for expressing genes in **oomycete** fungi.

L7 ANSWER 33 OF 34 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN DUPLICATE 25
TI TRANSFORMATION OF THE **OOMYCETE** PATHOGEN PHYTOPHTHORA-INFESTANS.

L7 ANSWER 34 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN
TI Constitutive expression of an inducible lipoxygenase in transgenic tobacco decreases susceptibility to Phytophthora parasitica var. nicotianae.

=> d bib abs 26 17 11

L7 ANSWER 26 OF 34 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN DUPLICATE 18
AN 97:61496 AGRICOLA
DN IND20587223
TI A peroxidase gene **promoter** induced by phytopathogens and methyl jasmonate in transgenic plants.
AU Curtis, M.D.; Rae, A.L.; Rusu, A.G.; Harrison, S.J.; Manners, J.M.
CS Cold Spring Harbor Laboratory, Cold Spring Harbor, NY.
SO Molecular plant-microbe interactions : MPMI, Apr 1997. Vol. 10, No. 3. p. 326-338
Publisher: St. Paul, MN : APS Press, [c1987-
CODEN: MPMIEL; ISSN: 0894-0282
NTE Includes references
CY Minnesota; United States
DT Article
FS U.S. Imprints not USDA, Experiment or Extension
LA English
AB The expression of two closely related peroxidase iso-genes, Shpx6a and Shpx6b, of the legume Stylosanthes humilis was studied using isogene-specific reverse transcriptase PCR techniques. Results indicated that transcripts of both genes were rapidly induced following inoculation with the fungal pathogen Colletotrichum gloeosporioides, wounding and treatment with the defense regulator methyl jasmonate (MeJA). In contrast, treatment of leaves of S. humilis with abscisic acid (ABA) and salicylic acid (SA) did not induce transcripts of either isogene. A genomic clone containing the Shpx6b gene was isolated and 594 bp of 5' sequence upstream of the translation start was fused in frame to the coding region of the uidA reporter gene and introduced into tobacco. Expression from the Shpx6b **promoter** in transgenic plants was determined by histochemical staining and quantitative assays of beta-glucuronidase (GUS). In transgenic tobacco, GUS expression was detected in cotyledons, vascular cells of young leaves, anthers, pollen, and the stigma and style. Wounding of the tobacco plants produced very localized GUS staining. Much more extensive staining for GUS was observed following inoculation of tobacco leaves with conidia of the fungal pathogen Cercospora nicotianae and the inoculation of wound sites with mycelium of the **Oomycete** pathogen Phytophthora parasitica var. nicotianae. Treatment of mature leaves with methyl jasmonate induced GUS activity while treatment with ABA, SA, and H2O2 had no effect. A similar strong induction of GUS activity was measured in young transgenic seedlings germinated on MeJA while some, but much weaker, induction of GUS activity was observed in seedlings treated with SA. The sequence of the **promoter** contained motifs homologous to putative cis elements in other plant genes responsive to MeJA. The Shpx6b gene is the first plant peroxidase gene shown to be induced by both microbial pathogens and MeJA and its **promoter** will be useful for investigations of signaling processes during fungal infection and for the expression of foreign gene products at infection sites.

L7 ANSWER 17 OF 34 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2001:78515 CAPLUS
DN 134:142782
TI Arabidopsis thaliana cyclic nucleotide-gated ion channel CNGC/DND and genes and their use as regulators of plant disease resistance and cell death
IN Bent, Andrew F.; Yu, I-Ching; Clough, Steven J.; Fengler, Kevin A.; Smith, Robert K., Jr.
PA Wisconsin Alumni Research Foundation, USA
SO PCT Int. Appl., 91 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001007596	A1	20010201	WO 2000-US20216	20000724
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	EP 1196553	A1	20020417	EP 2000-950659	20000724
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2003505076	T2	20030212	JP 2001-512865	20000724
PRAI	US 1999-145310P	P	19990723		
	WO 2000-US20216	W	20000724		

AB The cell death response known as the hypersensitive response (HR) is a central feature of gene-for-gene plant disease resistance. Plants also defend against pathogens via multigenically controlled broad-spectrum defense responses, such as those modulated by salicylic acid. The DND (Defense, No Death) loci of Arabidopsis thaliana regulate the extent of broad-spectrum disease resistance against a broad range of viral, bacterial, **oomycete**, and fungal pathogens. Plants lacking a functional copy of the DND1 or DND2 gene are defective in HR cell death but exhibit successful gene-for-gene disease resistance. Plants lacking a functional copy of the DND1 or DND2 gene also exhibit an enhanced broad-spectrum disease resistance phenotype. The DND1 and DND2 gene products are identical to previously known cDNAs termed AtCNGC2 and AtCNGC1, resp., that encode apparent cyclic nucleotide-gated ion channel proteins. The identification of the CNGC/DND genes as regulators of disease resistance and host cell death, and the availability of CNGC/DND gene sequence information, provide new possibilities for controlling a wide variety of plant diseases.

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 11 OF 34 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:220649 CAPLUS
DN 136:258344
TI Arabidopsis thaliana genes exhibiting expression altered by **oomycete** pathogen infection
IN Glazebrook, Jane; Wang, Xun; Dangl, Jeffrey L.; Eulgem, Thomas; Zhu, Tong
PA Syngenta Participations A.-G., Switz.; University of North Carolina at Chapel Hill
SO PCT Int. Appl., 605 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002022675	A2	20020321	WO 2001-US28506	20010914
	WO 2002022675	A3	20030710		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	AU 2001090813	A5	20020326	AU 2001-90813	20010914
	EP 1368484	A2	20031210	EP 2001-970858	20010914
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
PRAI	US 2000-232778P	P	20000915		

US 2001-300183P P 20010622
WO 2001-US28506 W 20010914

AB Methods to identify genes, the expression of which is altered in response to pathogen infection, are provided, as well as the genes identified thereby. Arabidopsis plants of different genotypes are infected with different strains of an **oomycete**, Peronospora parasitica. RNA is isolated from each plant/pathogen pair and employed to prepare probes which are hybridized to a gene chip having nucleic acid sequences (probe sets) corresponding to .apprx.8200 Arabidopsis genes. Genes are then identified that are up-regulated or down-regulated in response to infection, including genes that are dependent on RPP7 or RPP8, which act via unconventional signaling cascades and are not dependent on defense regulators. Further, promoters of genes are provided that are rapidly and transiently transcribed after P. parasitica infection and are RPP7/8-dependent are significantly enriched with both novel sequence motifs and potential binding sites of known transcription factors. In addition, more than 200 genes are identified that are specifically controlled by the RPP4-dependent pathway, which mediates resistance of the Arabidopsis ecotype Col-0 to the Peronospora isolate Emoy2. According to their response to salicylic acid and the protein biosynthesis inhibitor cycloheximide, these genes are further subcategorized into immediate early and secondary response genes. Genes responsive to pathogen infection may be used to transform plants for improved resistance to infection.

=> s Shpx6b
L8 4 SHPX6B

=> d ti 1-4

L8 ANSWER 1 OF 4 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN
TI A peroxidase gene promoter induced by phytopathogens and methyl jasmonate in transgenic plants.

L8 ANSWER 2 OF 4 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI A peroxidase gene promote induced by phytopathogens and methyl jasmonate in transgenic plants.

L8 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2004 ACS on STN
TI A peroxidase gene promoter induced by phytopathogens and methyl jasmonate in transgenic plants

L8 ANSWER 4 OF 4 CABA COPYRIGHT 2004 CABI on STN
TI A peroxidase gene promoter induced by phytopathogens and methyl jasmonate in transgenic plants.

=> logoff hold
STN INTERNATIONAL SESSION SUSPENDED AT 12:47:19 ON 14 MAY 2004

FILE 'HOME' ENTERED AT 11:01:58 ON 21 MAY 2004

=> file agricola biosis caplus caba
=> s pathogen induced
L1 1141 PATHOGEN INDUCED

=> s l1 and promoter
L2 103 L1 AND PROMOTER

=> duplicate remove l2
L3 53 DUPLICATE REMOVE L2 (50 DUPLICATES REMOVED)

=> d ti 1-53

L3 ANSWER 1 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI Sequences of **pathogen-induced** promoters from Arabidopsis thaliana and use for enhanceing plant disease resistance

L3 ANSWER 2 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI Nucleic acid molecule for regulation of gene expression in plants

L3 ANSWER 3 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI NPR1 modulates cross-talk between salicylate- and jasmonate-dependent defense pathways through a novel function in the cytosol

L3 ANSWER 4 OF 53 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Sensitization of defense responses and activation of programmed cell death by a **pathogen-induced** receptor-like protein kinase in Arabidopsis.

L3 ANSWER 5 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI MRC-5 and HCA2 cell lines immortalized by overexpression of the human telomerase gene and fully permissive for human cytomegalovirus for vaccine manufacture

L3 ANSWER 6 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI Sunflower genes induced by infection with Sclerotinia and their promoters and their uses

L3 ANSWER 7 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI Salicylic acid biosynthetic genes and uses in enhancing plant disease resistance

L3 ANSWER 8 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI N gene proteins of tobacco in generating non-**pathogen induced** systemic acquired resistance (SAR) and improving viral, bacterial or fungal disease resistance in transgenic plants

L3 ANSWER 9 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI DNA constructs and methods for identification of compounds that activate salicylic acid-independent systemic acquired resistance (SI-SAR) pathway in plants

L3 ANSWER 10 OF 53 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN DUPLICATE 2
TI Preexisting systemic acquired resistance suppresses hypersensitive response-associated cell delath in Arabidopsis hrl1 mutant.

L3 ANSWER 11 OF 53 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Analysis of the DRR230 family of pea defensins: Gene expression pattern and evidence of broad host-range antifungal activity.

L3 ANSWER 12 OF 53 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN DUPLICATE 4
TI Potentiation of developmentally regulated plant defense response by AtWRKY18, a **pathogen-induced** Arabidopsis transcription factor.

L3 ANSWER 13 OF 53 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN DUPLICATE 5
TI Accumulation of tyrosol glucoside in transgenic potato plants expressing a parsley tyrosine decarboxylase.

L3 ANSWER 14 OF 53 CABA COPYRIGHT 2004 CABI on STN
TI Identification of genes involved in rhizobacteria-mediated induced systemic resistance in Arabidopsis.

L3 ANSWER 15 OF 53 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI The tobacco bZIP transcription factor BZI-1 binds to G-box elements in the promoters of phenylpropanoid pathway genes in vitro, but it is not involved in their regulation in vivo.

L3 ANSWER 16 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI Oomycete-resistant transgenic plants by virtue of **pathogen-induced** expression of a heterologous hypersensitive response elicitor

L3 ANSWER 17 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI Sunflower genes induced by infection with Sclerotinia and their promoters and their uses

L3 ANSWER 18 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI **Pathogen-induced** genes sre2a and sre2b of potato and their use in improving pathogen resistance in plants

L3 ANSWER 19 OF 53 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI A family of dispersed repetitive DNA sequences in tobacco contain clusters of W-box elements recognized by **pathogen-induced** WRKY DNA-binding proteins.

L3 ANSWER 20 OF 53 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Powdery mildew induced expression of a peroxidase gene in Triticum aestivum L.

L3 ANSWER 21 OF 53 CABA COPYRIGHT 2004 CABI on STN

TI Engineering disease resistance in plants using the CF9-AVR9 two component system.

L3 ANSWER 22 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI sequence of Maize replication protein a large and middle subunits with applications for modulation of cell cycle in both dicots and monocots

L3 ANSWER 23 OF 53 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Identification of genes encoding receptor-like protein kinases as possible targets of pathogen- and salicylic acid-induced WRKY DNA-binding proteins in Arabidopsis.

L3 ANSWER 24 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI Apple LRPKm1 (leucine-rich repeat receptor-like protein kinase m1) gene and its use in the preparation of fungistatic transgenic plants to prevent apple scab

L3 ANSWER 25 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI Genes for enzymes of salicylate biosynthesis of for the induction of disease resistance in plants

L3 ANSWER 26 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI The corn family of pathogenesis-related 1 (PR-1) genes and their promoters

L3 ANSWER 27 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI A novel plant cysteine proteinase for use in development of disease-resistant plants and the genes encoding them and the **promoter** regions of the genes

L3 ANSWER 28 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI Tobacco cDNAs for genes induced upon pathogen infection and their uses

L3 ANSWER 29 OF 53 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN DUPLICATE 8
TI Rapid transcript accumulation of pathogenesis-related genes during an incompatible interaction in bacterial speck disease-resistant tomato plants.

L3 ANSWER 30 OF 53 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN DUPLICATE 9
TI **Pathogen-induced** elicitin production in transgenic tobacco generates a hypersensitive response and nonspecific disease resistance.

L3 ANSWER 31 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI A pathogen- and salicylic acid-induced WRKY DNA-binding activity recognizes the elicitor response element of the tobacco class I chitinase gene **promoter**

L3 ANSWER 32 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI Nematode infection-induced plant promoters from Arabidopsis thaliana

L3 ANSWER 33 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI A cDNA for a cysteine proteinase from pathogen-infected plants

L3 ANSWER 34 OF 53 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN DUPLICATE 10
TI Differential expression of a senescence-enhanced metallothionein gene in Arabidopsis in response to isolates of Peronospora parasitica and Pseudomonas syringae.

L3 ANSWER 35 OF 53 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN DUPLICATE 11
TI Systemic induction of an Arabidopsis plant defensin gene **promoter** by tobacco mosaic virus and jasmonic acid in transgenic tobacco.

L3 ANSWER 36 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI Rice **pathogen-induced** proteins and their use to produce transgenic disease-resistant plants

L3 ANSWER 37 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI HMG-CoA reductase gene HMG2 **promoter** expression system and post-harvest production of gene products in plants and plant cell cultures

L3 ANSWER 38 OF 53 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States

of America. It contains copyrighted materials. All rights reserved.
(2004) on STN DUPLICATE 12
TI Expression of an engineered cecropin gene cassette in transgenic tobacco plants confers disease resistance to Pseudomonas syringae pv. tabaci.

L3 ANSWER 39 OF 53 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN DUPLICATE 13
TI Expression of a defence-related intercellular barley peroxidase in transgenic tobacco.

L3 ANSWER 40 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI Flax rust-inducible **promoter** of the Fis1 gene of Linum usitatissimum and its uses

L3 ANSWER 41 OF 53 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2004) on STN DUPLICATE 14
TI Production of salicylic acid precursors is a major function of phenylalanine ammonia-lyase in the resistance of Arabidopsis to Peronospora parasitica.

L3 ANSWER 42 OF 53 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2004) on STN DUPLICATE 15
TI A benzothiadiazole derivative induces systemic acquired resistance in tobacco.

L3 ANSWER 43 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI Tissue-specific targeting of cytokine unresponsiveness in transgenic mice

L3 ANSWER 44 OF 53 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2004) on STN DUPLICATE 16
TI Developmental and **pathogen-induced** activation of an msr gene, str 246C, from tobacco involves multiple regulatory elements.

L3 ANSWER 45 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI In vitro characterization of a cassette to accumulate multiple proteins through synthesis of a self-processing polypeptide

L3 ANSWER 46 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI Pathogen-inducible lethal genes for the preparation of pathogen-resistant plants.

L3 ANSWER 47 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 17
TI A basic-type PR-1 **promoter** directs ethylene responsiveness, vascular and abscission zone-specific expression

L3 ANSWER 48 OF 53 CABA COPYRIGHT 2004 CABI on STN
TI New tendencies in phytopathology around the year 2000.

L3 ANSWER 49 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
TI Pathogen-resistant transgenic Solanaceae.

L3 ANSWER 50 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 18
TI A wheat glutathione-S-transferase gene with transposon-like sequences in the **promoter** region

L3 ANSWER 51 OF 53 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2004) on STN DUPLICATE 19
TI Developmental and **pathogen-induced** activation of the Arabidopsis acidic chitinase **promoter**.

L3 ANSWER 52 OF 53 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2004) on STN DUPLICATE 20
TI Tissue-specific and **pathogen-induced** regulation of a Nicotiana plumbaginifolia beta-1,3-glucanase gene.

L3 ANSWER 53 OF 53 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.
(2004) on STN
TI Sensitization of defense responses and activation of programmed cell death by a **pathogen-induced** receptor-like protein kinase in Arabidopsis.

=> d bib abs 51 49 47 44 39 37 32 35 26 19 18 1

L3 ANSWER 51 OF 53 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN DUPLICATE 19
AN 92:23449 AGRICOLA
DN IND92006298
TI Developmental and **pathogen-induced** activation of the Arabidopsis acidic chitinase **promoter**.
AU Samac, D.A.; Shah, D.M.
CS Monsanto Company, Chesterfield, MO
AV DNAL (QK725.P532)
SO The Plant cell, Oct 1991. Vol. 3, No. 10. p. 1063-1072
Publisher: Rockville, Md. : American Society of Plant Physiologists.
ISSN: 1040-4651
NTE Includes references.
DT Article
FS U.S. Imprints not USDA, Experiment or Extension
LA English
AB Expression of the Arabidopsis acidic chitinase **promoter** was investigated during plant development and in response to inoculation with fungal pathogens. A chimeric gene composed of 1129 bp of 5' upstream sequence from the acidic chitinase gene was fused to the beta-glucuronidase (GUS) coding region and used to transform Arabidopsis and tomato. **Promoter** activity was monitored by histochemical and quantitative assays of GUS activity. In healthy transgenic plants, the acidic chitinase **promoter** activity was restricted to roots, leaf vascular tissue, hydathodes, guard cells, and anthers, whereas GUS expression was induced in mesophyll cells surrounding lesions caused by Rhizoctonia solani infection of transgenic Arabidopsis. In transgenic tomato plants, GUS expression was induced around necrotic lesions caused by Alternaria solani and Phytophthora infestans. Expression of the acidic chitinase **promoter**-GUS transgene was weakly induced by infiltrating leaves with salicylic acid. Analysis of a series of 5' deletions of the acidic chitinase **promoter** in Arabidopsis indicated that the proximal 192 bp from the transcription initiation site was sufficient to establish both the constitutive and induced pattern of expression. Elements further upstream were involved in quantitative expression of the gene. The location of a negative regulatory element was indicated between -384 and -590 and positive regulatory elements between -1129 and-590.

L3 ANSWER 49 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1992:102843 CAPLUS
DN 116:102843
TI Pathogen-resistant transgenic Solanaceae.
IN De Wit, Peter Jozef Gerard Marie
PA Rijkslandbouwuniversiteit Wageningen, Neth.
SO PCT Int. Appl., 25 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9115585	A1	19911017	WO 1991-NL52	19910327
	W: AU, CA, JP, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
	NL 9000773	A	19911101	NL 1990-773	19900402
	CA 2056439	AA	19911003	CA 1991-2056439	19910327
	AU 9176845	A1	19911030	AU 1991-76845	19910327
	AU 642252	B2	19931014		
	EP 474857	A1	19920318	EP 1991-907897	19910327
	EP 474857	B1	19981223		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	JP 05505110	T2	19930805	JP 1991-507720	19910327
	EP 874055	A2	19981028	EP 1998-200559	19910327
	EP 874055	A3	19990602		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	AT 174931	E	19990115	AT 1991-907897	19910327
	ES 2128318	T3	19990516	ES 1991-907897	19910327
	IL 97736	A1	20000217	IL 1991-97736	19910331
	US 5866776	A	19990202	US 1994-199984	19940222
PRAI	NL 1990-773	A	19900402		
	EP 1991-907897	A3	19910327		
	WO 1991-NL52	A	19910327		
	US 1991-777400	B1	19911202		

AB A method for protection of plants against pathogen,s comprising **pathogen-induced** interaction of a plant-resistance gene

(R) product and a pathogen-avirulence (A) gene product, both genes being expressed in the plant, is described. Thus, an A gene is introduced into an R gene-containing plant. Both genes are regulated such that they are simultaneously expressed at the site of pathogen infection, and the expression is induced by a broad range of pathogens. Alternatively, both R and A genes are introduced into the plant and their expression is regulated as described. The cDNA for the A gene avr9 of Cladosporium fulvum was cloned and sequenced. This cDNA encodes a 63-amino acid precursor of the 28-amino acid elicitor. This elicitor induces resistance in tomato cultivars which have the R gene Cf9. A virulent C. fulvum expressing the avr9 gene was converted to avirulence on tomatoes with Cf9 genotype.

L3 ANSWER 47 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 17
AN 1994:209918 CAPLUS
DN 120:209918
TI A basic-type PR-1 **promoter** directs ethylene responsiveness, vascular and abscission zone-specific expression
AU Eyal, Yoram; Meller, Yael; Lev-Yadun, Simcha; Fluhr, Robert
CS Dep. Plant Genet., Weizmann Inst. Sci., Rehovot, 76100, Israel
SO Plant Journal (1993), 4(2), 225-34
CODEN: PLJUED; ISSN: 0960-7412
DT Journal
LA English
AB Pathogenesis-related (PR) proteins form a heterogeneous group of host-encoded, low-mol.-mass proteins that are secreted through the exocytic pathway. They are synthesized by the plant in response to various stimuli, including pathogen attack or exposure to certain chems. The PRB-1b gene of Nicotiana tabacum codes for a basic-type PR-1 protein whose transcription is regulated by ethylene. A minimal ethylene-responsive **promoter** element was defined by deletion anal. in transgenic tobacco plants. **Promoter** sequences containing 213 bp or more were sufficient to enhance a 20-fold increase of β-glucuronidase reporter gene expression in transgenic tobacco leaves exposed to 20 μL L-1 of ethylene, while 67 bp were not sufficient to trigger ethylene responsiveness. All the constructs that retained ethylene inducibility exhibited phloem-specific activity, which was constitutive in petiole and pedicel abscission zones. This functional study was correlated to an in vitro screening of the major nuclear proteins' binding sites present on the **promoter**. Gel-shift anal. using nuclear exts. from ethylene-treated and non-treated plants revealed five sequence-specific protein-DNA complexes on **promoter** sequences spanning -863 to -142 bp. Constitutive expression of the basic-type PR-1 genes at the leaf and petiole or flower and pedicel interfaces may represent pre-emption of plant defenses against potential pathogens, suggesting a functional similarity to **pathogen-induced** expression in the leaf.

L3 ANSWER 44 OF 53 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN DUPLICATE 16
AN 95:47511 AGRICOLA
DN IND20470883
TI Developmental and **pathogen-induced** activation of an msr gene, str 246C, from tobacco involves multiple regulatory elements.
AU Gough, C.; Hemon, P.; Tronchet, M.; Lacomme, C.; Marco, Y.; Roby, D.
CS UMR CMRS/INRA, Castanet-Tolosan, France.
AV DNAL (442.8 Z34)
SO Molecular & general genetics : MGG, May 10, 1995. Vol. 247, No. 3. p. 323-337
Publisher: Berlin, Germany : Springer Produktions-Gesellschaft.
CODEN: MGGEAE; ISSN: 0026-8925
NTE Includes references
CY Germany
DT Article
FS Non-U.S. Imprint other than FAO
LA English
AB A family of genes, the so-called msr genes (multiple stimulus response), has recently been identified on the basis of sequence homology in various plant species. Members of this gene family are thought to be regulated by a number of environmental or developmental stimuli, although it is not known whether any one member responds more specifically to one stimulus, or whether each gene member responds to various environmental stimuli. In this report, we address this question by studying the tobacco msr gene str246C. Using transgenic tobacco plants containing 2.1 kb of 5' flanking DNA sequence from the str246C gene fused to the beta-glucuronidase (GUS) coding region, the complex expression pattern of the str246C **promoter** has been characterized. Expression of the str246C **promoter** is strongly and rapidly induced by bacterial, fungal and viral infection and this induction is systemic. Elicitor preparations from phytopathogenic bacteria and fungi activate the str246C **promoter**

to high levels, as do wounding, the application of auxin, auxin and cytokinin, salicylic acid or copper sulfate, indicating the absence of gene specialization within the msr gene family, at least for str246C. In addition, GUS activity was visualized histochemically in root meristematic tissues of tobacco seedlings and is restricted to roots and sepals of mature plants. Finally, analysis of a series of 5' deletions of the str246C **promoter**-GUS gene fusion in transgenic tobacco plants confirms the involvement of multiple regulatory elements. A region of 83 bp was found to be necessary for induction of **promoter** activity in response to Pseudomonas solanacearum, while auxin inducibility and root expression are apparently not controlled by this element, since its removal does not abolish either response. An element of the **promoter** with a negative effect on **promoter** activation by P. solanacearum was also identified.

L3 ANSWER 39 OF 53 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
DUPLICATE 13
AN 1997:156956 BIOSIS
DN PREV199799456159
TI Expression of a defence-related intercellular barley peroxidase in transgenic tobacco.
AU Kristensen, Brian K. [Reprint author]; Brandt, Jakob; Bojsen, Kirsten; Thordal-Christensen, Hans; Kerby, Kent B.; Collinge, David B.; Mikkelsen, Jorn D.; Rasmussen, Soren K.
CS Environmental Sci. Technology Dep., Mil-301, Riso Natl. Lab., DK-4000 Roskilde, Denmark
SO Plant Science (Shannon), (1997) Vol. 122, No. 2, pp. 173-182.
CODEN: PLSCE4. ISSN: 0168-9452.
DT Article
LA English
ED Entered STN: 15 Apr 1997
Last Updated on STN: 15 Apr 1997
AB Tobacco plants (Nicotiana benthamiana L.) have been transformed with a T-DNA vector construct carrying the cDNA pBH6-301, encoding the major **pathogen induced** leaf peroxidase (Prx8) of barley, under control of an enhanced CaMV 35S **promoter**. Progeny from three independent transformants were analyzed genetically, phenotypically and biochemically. The T-DNA was steadily inherited through three generations. The barley peroxidase is expressed and sorted to the intercellular space in the transgenic tobacco plants. The peroxidase can be extracted from the intercellular space in two molecular forms from both barley and transgenic tobacco. The tobacco expressed forms are indistinguishable from the barley expressed forms as determined by analytical isoelectric focusing (pI 8.5) and Western-blotting. Staining for N-glycosylation showed that one form only was glycosylated. The N-terminus of purified Prx8 from transgenic tobacco was blocked by pyroglutamate, after the removal of which, N-terminal sequencing verified the transit signal-peptide cleavage site deduced from the cDNA sequence. Phenotype comparisons show that the constitutive expression of Prx8 lead to growth retardation. However, an infection assay with the tobacco powdery mildew pathogen Erysiphe cichoracearum did not indicate that the transgenic plants had achieved enhanced resistance.

L3 ANSWER 37 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1997:636139 CAPLUS
DN 127:289128
TI HMG-CoA reductase gene HMG2 **promoter** expression system and post-harvest production of gene products in plants and plant cell cultures
IN Cramer, Carole Lyn; Weissenborn, Deborah Louise
PA Virginia Tech Intellectual Properties, Inc., USA
SO U.S., 49 pp., Cont.-in-part of U.S. Ser. No. 100,816, abandoned.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5670349	A	19970923	US 1994-282581	19940729
	CA 2168430	AA	19950209	CA 1994-2168430	19940802
	WO 9503690	A1	19950209	WO 1994-US8722	19940802
	W: AM, AU, BB, BG, BR, BY, CA, CN, CZ, FI, GE, HU, JP, KE, KG, KR, KZ, LK, LT, LV, MD, MG, MN, MW, NO, NZ, PL, RO, RU, SD, SI, SK, TJ, TT, UA, UZ, VN				
	RW: KE, MW, SD, AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	ZA 9405745	A	19950314	ZA 1994-5745	19940802
	EP 712273	A1	19960522	EP 1994-925166	19940802
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
	US 5689056	A	19971118	US 1995-550544	19951107
	US 2002065408	A1	20020530	US 2001-902653	20010712
	US 2003226163	A1	20031204	US 2003-394494	20030320
PRAI	US 1993-100816	B2	19930802		

US 1994-282581 A 19940729
WO 1994-US8722 W 19940802
US 1997-890624 B1 19970709
US 2001-902653 B1 20010712

AB The invention relates in part to plant HMG2 HMG-CoA reductase genes and in part to the post-harvest production method of producing gene products of interest in plant tissues and cultures. The HMG2 **promoter** elements are responsive to pathogen-infection, pest-infestation, wounding, or elicitor or chemical treatments. The HMG2 elements are also active in specialized tissues of the plant including pollen and mature fruits. HMG2 **promoter** elements and HMG2-derived promoters can be advantageously used to drive the expression of disease and pest resistance genes, whereby transgenic plants having such gene constructs would be resistant to the targeted disease and pest. In particular, the HMG2 gene expression system can be utilized in developing nematode resistant plants. The post-harvest production method of the invention utilizes plant tissues and cell cultures of plants or plant cells engineered with an expression construct comprising an inducible **promoter**, such as the HMG2 **promoter**, operably linked to a gene of interest. Production of the desired gene product is obtained by harvesting, followed by inducing and processing the harvested tissue or culture. The post-harvest production method may be advantageously used to produce direct or indirect gene protein or RNA products that are labile, volatile, toxic, hazardous, etc.

L3 ANSWER 32 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:509301 CAPLUS
DN 129:132211
TI Nematode infection-induced plant promoters from Arabidopsis thaliana
IN Karimi, Mansour; Barthels, Nathalie; Gheysen, Godelieve
PA Plant Genetic Systems, N.V., Belg.
SO PCT Int. Appl., 56 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9831822	A1	19980723	WO 1998-EP388	19980119
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
	AU 9866157	A1	19980807	AU 1998-66157	19980119
	AU 720780	B2	20000615		
	BR 9807488	A	20000321	BR 1998-7488	19980119
	EP 1007709	A1	20000614	EP 1998-907984	19980119
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2001508661	T2	20010703	JP 1998-533700	19980119
	US 6252138	B1	20010626	US 1999-341678	19990720
PRAI	EP 1997-200103	A	19970120		
	WO 1998-EP388	W	19980119		

AB New **pathogen-induced** promoters are provided, particularly nematode-induced promoters, which are characterized by their selective induction of expression in the vicinity of the pathogen infection sites, such as the fixed feeding cells induced by infection of the plant by nematodes. T-DNA tagging with pΔgusBin19 was used for the identification of a **promoter** induced by nematode inoculation (Heterodera schachtii, Meloidogyne incognita, or Xiphinema diversicaudatum) in an early stage of Arabidopsis thaliana line ARM1. PCR amplified fragments of the T-DNA insertion sites are used as a probe to screen a genomic library of DNA of a wild-type A. thaliana line to isolate genomic clones carrying the uninterrupted genomic DNA of the wild-type line C24 which is the target sequence for T-DNA integration in line ARM1. Deletion anal. identified regions that confer more specific and/or more enhanced **promoter** activity when combined with either homologous or heterologous transcription signals such as TATA-boxes or upstream enhancing elements. Further provided are chimeric genes comprising these promoters as regulatory elements, as well as transgenic plants, comprising those chimeric genes, which are less susceptible to pathogen infections. Chimeric genes carrying a barnase coding region or a proteinase inhibitor coding region (oryzacystatin-I) under control of the nematode-inducible **promoter** cause resistance to nematode infection in transformed potato or oilseed rape plants.

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 35 OF 53 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN

DUPLICATE 11
AN 1998:480022 BIOSIS
DN PREV199800480022
TI Systemic induction of an Arabidopsis plant defensin gene **promoter** by tobacco mosaic virus and jasmonic acid in transgenic tobacco.
AU Mitter, Neena; Kazan, Kemal; Way, Heather M.; Broekaert, Willem F.; Manners, John M. [Reprint author]
CS Cooperative Res. Cent. Tropical Plant Pathol., Univ. Queensland, Brisbane, QLD 4072, Australia
SO Plant Science (Shannon), (Sept. 4, 1998) Vol. 136, No. 2, pp. 169-180. print.
CODEN: PLSCE4. ISSN: 0168-9452.
DT Article
LA English
ED Entered STN: 5 Nov 1998
Last Updated on STN: 5 Nov 1998
AB The PDF1.2 gene of Arabidopsis thaliana encodes a plant defensin that is systemically induced by a SA-independent signaling pathway. Traditionally tobacco has been used to analyse **pathogen-induced** systemic responses. To determine whether a similar systemic signaling pathway exists in tobacco the **promoter** region of the PDF1.2 gene was fused to the uidA reporter gene encoding beta-glucuronidase (GUS) and introduced into tobacco (cv. Xanthi-nc NN). The transgenic tobacco plants showed no increase in GUS activity after treatment with salicylate but treatment of seedlings and mature leaves with jasmonic acid, methyl viologen and rose bengal led to an induction of GUS activity with jasmonic acid being the strongest inducer. Exposure of mature transgenic plants to ethylene also led to a significant induction of GUS. Wounding resulted in highly localised induction at wound sites. Inoculation of leaves with the compatible pathogens Phytophthora parasitica var. nicotianae, Cercospora nicotianae and the incompatible tobacco mosaic virus (TMV) all led to strong GUS induction. The systemic signaling of the PDF1.2 **promoter** was investigated by either inoculation of a lower leaf with TMV or treatment of this leaf with jasmonic acid. Increased GUS activity was observed in the non-inoculated upper leaves at 4-6 days after treatment. Treatment of the plants with TMV induced GUS mRNA and PR1a mRNA locally and systemically while jasmonic acid treatment induced GUS mRNA only. These results are consistent with the existence of a **pathogen-induced**, salicylate-independent systemic signaling pathway, possibly involving ethylene and jasmonate signaling components, in both tobacco and Arabidopsis.

L3 ANSWER 26 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:566185 CAPLUS
DN 131:167835
TI The corn family of pathogenesis-related 1 (PR-1) genes and their promoters
IN Crane, Virginia C.
PA Pioneer Hi-Bred International, Inc., USA
SO PCT Int. Appl., 86 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9943819	A1	19990902	WO 1999-US3011	19990211
	W: AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, CZ, DE, DE, DK, DK, EE, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	CA 2315549	AA	19990902	CA 1999-2315549	19990211
	AU 9926737	A1	19990915	AU 1999-26737	19990211
	AU 754376	B2	20021114		
	EP 1056862	A1	20001206	EP 1999-906944	19990211
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	ZA 9901526	A	19990826	ZA 1999-1526	19990225
	US 2001025380	A1	20010927	US 2001-840479	20010423
PRAI	US 1998-76100P	P	19980226		
	US 1998-79648P	P	19980327		
	WO 1999-US3011	W	19990211		
	US 1999-257583	A3	19990225		

AB Members of the **pathogen-induced** PR-1 (pathogenesis-related 1) gene family of corn are identified and the **promoter** regions of the genes are characterized for use in the expression of foreign genes in corn. The PR-1 coding regions can be used to alter pathogen resistance in other plants (no data). In addition, the

promoters of the PR-1 genes can be modified to alter levels of expression and induction patterns to increase disease resistance. Characterization of the induction of the promoters by pathogens, salicylic acid, jasmonic acid, and UV light is reported.
RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 19 OF 53 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
DUPLICATE 7
AN 2001:473355 BIOSIS
DN PREV200100473355
TI A family of dispersed repetitive DNA sequences in tobacco contain clusters of W-box elements recognized by **pathogen-induced** WRKY DNA-binding proteins.
AU Yang, Peizhen; Chen, Zhixiang [Reprint author]
CS Department of Microbiology, Molecular Biology and Biochemistry, University of Idaho, Moscow, ID, 83844-3052, USA
zchen@uidaho.edu
SO Plant Science (Shannon), (September, 2001) Vol. 161, No. 4, pp. 655-664. print.
CODEN: PLSCE4. ISSN: 0168-9452.
DT Article
LA English
ED Entered STN: 10 Oct 2001
Last Updated on STN: 23 Feb 2002
AB We have previously identified in tobacco (Nicotiana tabacum) a group of pathogen- and salicylic acid (SA)-induced DNA-binding proteins that contain the highly conserved WRKY DNA-binding domain. In order to identify their potential target genes, we have isolated tobacco genomic DNA sequences that contain the consensus TTGAC(C/T) binding sites (W boxes) recognized by WRKY DNA-binding proteins. Surprisingly, sequence analysis of the 16 clones with the strongest binding affinities for the WRKY proteins indicated that they all belong to a family of dispersed repetitive DNA sequences with an approximate copy number of 10,000 per haploid tobacco genome. These repetitive DNA sequences contain a number of direct and inverted repeats, a feature commonly attributed to mobile genetic elements. BLAST search revealed that similar repetitive sequences are present in the promoters of the tobacco par/str246C gene and the gene encoding a feedback-insensitive anthranilate synthase alpha-2 chain. Interestingly, the par/str246C gene, which contains a W-box element in the repetitive sequence of its **promoter**, was induced dramatically in resistant tobacco plants after infection with tobacco mosaic virus. These results support that dispersed repetitive DNA sequences may serve as reservoirs for new functional cis-acting DNA elements that can be recruited through chromosomal rearrangement to participate in transcriptional regulation of nearby genes.

L3 ANSWER 18 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:467958 CAPLUS
DN 135:72164
TI **Pathogen-induced** genes sre2a and sre2b of potato and their use in improving pathogen resistance in plants
IN Scheel, Dierk; Kistner, Catherine; Rosahl, Sabine
PA Bioplant Biotechnologisches Forschungslabor G.m.b.H., Germany; Institut Fuer Pflanzenbiochemie (IPB)
SO Ger. Offen., 30 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19958961	A1	20010628	DE 1999-19958961	19991207
PRAI DE 1999-19958961		19991207		

AB Nucleic acids which may be used to increase the resistance of plants to pathogens, especially Phytophthora infestans, are disclosed. Transgenic plants and a method to prepare them are further disclosed. Thus, potato genes sre2a and sre2b, which are induced in potato by Pseudomonas syringae pv. maculicola were cloned and sequenced. The sre2a gene appeared to encode several proteins due to alternative mRNA splicing.
RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 1 OF 53 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:796844 CAPLUS
DN 139:287372
TI Sequences of **pathogen-induced** promoters from Arabidopsis thaliana and use for enhanceing plant disease resistance
IN Repetti, Peter; Scofield, Steven R.; Century, Karen
PA DNA Plant Technology Corporation, USA
SO PCT Int. Appl., 41 pp.
CODEN: PIXXD2

DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003083042	A2	20031009	WO 2002-US34220	20021024

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2001-335249P P 20011024

AB The present invention provides sequences of 16 new **pathogen-induced** promoters cloned from Arabidopsis thaliana. The present invention provides compns. comprising **pathogen-induced** promoters as well as methods of using such promoters to enhance pathogen resistance in plants.

=> s ((phenylalanine ammonia lyase) or (chalcone synthase)) and promoter
L4 887 ((PHENYLALANINE AMMONIA LYASE) OR (CHALCONE SYNTHASE)) AND PROMOTER

=> duplicate remove l4
L5 395 DUPLICATE REMOVE L4 (492 DUPLICATES REMOVED)

=> s l5 and (Phytophthora or Pythium or Bremia)
L6 11 L5 AND (PHYTOPHTHORA OR PYTHIUM OR BREMIA)

=> d ti 1-11

L6 ANSWER 1 OF 11 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN
TI Constitutive expression of **phenylalanine ammonia-lyase** gene from Stylosanthes humilis in transgenic tobacco leads to enhanced disease resistance but impaired plant growth.

L6 ANSWER 2 OF 11 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN
TI Expression of an anther-specific **chalcone synthase** -like gene is correlated with uninucleate microspore development in Nicotiana sylvestris.

L6 ANSWER 3 OF 11 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN
TI Temporal and spatial pattern of expression of the pea **phenylalanine ammonia-lyase** gene1 **promoter** in transgenic tobacco.

L6 ANSWER 4 OF 11 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN
TI Cloning and properties of a rice gene encoding **phenylalanine ammonia-lyase**.

L6 ANSWER 5 OF 11 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Importance of AC-rich element on pea **phenylalanine ammonia-lyase** gene 1 **promoter** for expression induced by nonpathogenic attack.

L6 ANSWER 6 OF 11 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Expression of the chimeric pea PSPAL2 **promoter** in transgenic tobacco in response to fungal ingress and injury.

L6 ANSWER 7 OF 11 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
TI Extracellular protein elicitors from **Phytophthora**: Host-specificity and induction of resistance to bacterial and fungal phytopathogens.

L6 ANSWER 8 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN
TI Over expression of E. coli trehalose-6-phosphate synthase gene to alter trehalose-6-phosphate level in plant for disease resistance

L6 ANSWER 9 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN
TI Cloning of cryptogein gene and construction of its plant expression vector

L6 ANSWER 10 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN
TI Inducible plant caffeic acid O-methyltransferase II gene **promoter** and chimeric genes for expression in plants

L6 ANSWER 11 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN
TI Role of jasmonates in the elicitor- and wound-inducible expression of defense genes in parsley and transgenic tobacco

=> d bib abs 7 8 11 5 3 6

L6 ANSWER 7 OF 11 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AN 1993:211969 BIOSIS
DN PREV199395113194
TI Extracellular protein elicitors from **Phytophthora**: Host-specificity and induction of resistance to bacterial and fungal phytopathogens.
AU Kamoun, Sophien [Reprint author]; Young, Mary; Glascock, Christopher B.; Tyler, Brett M.
CS Cent. Eng. Plants Resistance Against Pathogens, 1920 Fifth Street, Davis, CA 95616, USA
SO Molecular Plant-Microbe Interactions, (1993) Vol. 6, No. 1, pp. 15-25. CODEN: MPMIEL. ISSN: 0894-0282.
DT Article
LA English
ED Entered STN: 23 Apr 1993
Last Updated on STN: 24 Apr 1993
AB Purified elicitor proteins (elicitins) from **Phytophthora** parasitica and P. cryptogea induced both localized and distal hypersensitive responses (HR) specifically in Nicotiana species and some radish and turnip cultivars but not in 12 other plant species. Differences between HR induction by acidic (parasiticein) and basic (cryptogein) isoforms were observed only for distal HR assays. Cryptogein consistently induced stronger distal necrosis in tobacco and radish than parasiticein. Similar results were obtained for the induction of a bean **chalcone synthase promoter** fused to a beta-glucuronidase reporter in a transgenic tobacco line. However, in localized infiltration assays, both elicitin isoforms induced necrotic HR lesions at similar levels, suggesting that the difference between acidic and basic elicitins is related to distal HR induction and not to necrogenicity per se. Induced resistance to two P. parasitica isolates was observed on tobacco after pretreatment with elicitins. In radish, elicitins induced cultivar-specific HR and resistance to the bacterial pathogen, Xanthomonas campestris pv. armoraciae.

L6 ANSWER 8 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:1007156 CAPLUS
DN 140:54484
TI Over expression of E. coli trehalose-6-phosphate synthase gene to alter trehalose-6-phosphate level in plant for disease resistance
IN Schluepmann, Henriette; Smeekens, Josephus Christianus Maria
PA Stichting Voor De Technische Wetenschappen, Neth.
SO PCT Int. Appl., 39 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003106687	A1	20031224	WO 2003-EP6213	20030612
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	EP 1375669	A1	20040102	EP 2002-77325	20020613
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
PRAI	EP 2002-77325	A	20020613		

AB The invention provides a transgenic plants expressing Escherichia coli trehalose-6-phosphate synthase gene. Compared to control, the content of trehalose-6-phosphate was increased in the transgenic plant. The transgenic plant provided in this invention showed resistance to Pseudomonas syringae.

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 11 OF 11 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1996:596238 CAPLUS
DN 125:270741
TI Role of jasmonates in the elicitor- and wound-inducible expression of defense genes in parsley and transgenic tobacco
AU Ellard-Ivey, Mary; Douglas, Carl J.
CS Dep. Botany, Univ. British Columbia, Vancouver, BC, V6T 1Z4, Can.
SO Plant Physiology (1996), 112(1), 183-192
CODEN: PLPHAY; ISSN: 0032-0889
PB American Society of Plant Physiologists
DT Journal
LA English
AB Jasmonates have been proposed to be signaling intermediates in the wound and/or elicitor-activated expression of plant defense genes. The authors used parsley (Petroselinum crispum) cell cultures and transgenic tobacco (Nicotiana tabacum) plants expressing 4CL1-GUS gene fusions to investigate the potential role played by jasmonates in mediating the wound and/or elicitor activation of phenylpropanoid and other defense-related genes. Jasmonates and α-linolenic acid strongly induced the expression of 4CL in a dose-dependent manner in parsley cells; Me jasmonate also activated the coordinate expression of other phenylpropanoid genes and the accumulation of furanocoumarin phytoalexins. However, the response of the cells to optimal Me jasmonate concns. was distinct quant. and qual. from the response of elicitor-treated cells. In transgenic tobacco wound-inducible tobacco 4CL genes and a 4CL1 **promoter**-GUS transgene were responsive to jasmonates and α-linolenic acid in a dose-dependent manner. Pretreatment of parsley cells or tobacco leaves with a lipoxygenase inhibitor reduced their responsiveness to the elicitor and to wounding. These results show that the elicitor response in parsley cells can be partially mimicked by jasmonate treatment, which supports a role for jasmonates in mediating wound-induced expression of 4CL and other phenylpropanoid genes.

L6 ANSWER 5 OF 11 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AN 2000:466481 BIOSIS
DN PREV200000466481
TI Importance of AC-rich element on pea **phenylalanine ammonia-lyase** gene 1 **promoter** for expression induced by nonpathogenic attack.
AU Imura, Yoshiyuki; Iguchi, Satoko; Toyoda, Kazuhiro; Ichinose, Yuki; Shiraishi, Tomonori; Yamada, Tetsuji [Reprint author]
CS Laboratory of Plant Pathology and Genetic Engineering, Faculty of Agriculture, Okayama University, 1-1-1, Tsushima-naka, Okayama, 700-8530, Japan
SO Journal of General Plant Pathology, (May, 2000) Vol. 66, No. 2, pp. 123-127. print.
ISSN: 1345-2630.
DT Article
LA English
ED Entered STN: 1 Nov 2000
Last Updated on STN: 10 Jan 2002
AB Regulatory elements in the **promoter** of **phenylalanine ammonia-lyase** gene 1 of pea (PSPAL1) in response to nonpathogenic attack were identified by in vivo footprinting analysis. The footprints determined AC-rich sequences, Box-I and Box-II, that were conserved at similar positions in the phenylpropanoid gene promoters from several plants. To reveal the functions of the AC-rich sequence in nonpathogen-responsiveness, we constructed Box-I-deletion PSPAL1 **promoter** (dB-1) with GUS reporter gene and transformed it into tobacco plant. The dB-1 had reduced basal expression and a complete loss of nonpathogen-responsiveness. These results indicate the essentiality of Box-I for PSPAL1 activation induced by nonpathogenic attack.

L6 ANSWER 3 OF 11 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2004) on STN
AN 1998:38603 AGRICOLA
DN IND20906864
TI Temporal and spatial pattern of expression of the pea **phenylalanine ammonia-lyase** genel **promoter** in transgenic tobacco.
AU Kawamata, S.; Shimoharai, K.; Imura, Y.; Ozaki, M.; Ichinose, Y.; Shiraishi, T.; Kunoh, H.; Yamada, T.

AV DNAL (450 P699)
SO Plant and cell physiology, July 1997. Vol. 38, No. 7. p. 792-803
Publisher: Kyoto, Japan : Japanese Society of Plant Physiologists.
CODEN: PCPHA5; ISSN: 0032-0781
NTE Includes references
CY Japan
DT Article
FS Non-U.S. Imprint other than FAO
LA English
AB Genes encoding **phenylalanine ammonia-lyase** (PAL) form a small multigene family with at least three members in pea. Tissue-specific expression of the **promoter** of a member of PAL gene family (PSPAL1) was investigated in the transgenic tobacco transformants carrying the different modes of chimeric fusion between the PSPAL1 **promoter** and a bacterial beta-glucuronidase (GUS) gene. In stems, at least, strict correlation was found between steady-state levels of Gus-mRNA and enzyme activity. Significantly high level of GUS activity was observed in roots, particularly in meristematic tissues and the pigmented region of petals of transgenic tobacco carrying the translational fusion type B (-1,394 to +140 of PSPAL1 connected to Gus), followed by moderately high level of GUS activity carrying the translational fusion type A (-1,394 to + 117). GUS expression in tissues of mature leaves, however, was very low in these constructs. Extremely low GUS activity was observed in the transformants of transcriptional fusion type (-1,394 to +5), whilst no activity was detected carrying non-transcription fusion type (-1,394 to -27). Furthermore, the pattern of the PSPAL1 expression was characterized in response to pathogen ingress and woundings in transgenic tobacco carrying the translational fusion type B. Woundings itself triggered marked expression of PSPAL1-driven GUS expression at the wounded sites. Inoculation of nonpathogens, **Phytophthora** capsici, P. boehmeriae and Erisiphe graminis f. sp. hordei, both caused rapid and very clear GUS expression zone along with the development of hypersensitive cell death area where callose was accumulated, however, the inoculation of a pathogen, P. nicotiana caused slow and hazy GUS expression zone along with the lesion development. These results suggest that the expression of pea PSPAL1 **promoter** is regulated in a similar fashion, at least in a part, in pea and transgenic tobacco, under the plant development and various environmental cues.

L6 ANSWER 6 OF 11 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN
AN 1999:409779 BIOSIS
DN PREV199900409779
TI Expression of the chimeric pea PSPAL2 **promoter** in transgenic tobacco in response to fungal ingress and injury.
AU Sriprasertsak, Permpong [Reprint author]; Salamah, Andi; Imura, Yoshiyuki; Ichinose, Yuki; Shiraishi, Tomonori; Yamada, Tetsuji
CS Central Laboratory and Greenhouse Complex, Kasetsart University Research and Development Institute, Kasetsart University, Kamphaengsaen, Nakhon Pathom, 73140, Thailand
SO Annals of the Phytopathological Society of Japan, (April, 1999) Vol. 65, No. 2, pp. 123-130. print.
CODEN: NSBGAM. ISSN: 0031-9473.
DT Article
LA English
ED Entered STN: 8 Oct 1999
Last Updated on STN: 8 Oct 1999
AB The 5'-upstream region of the pea **phenylalanine ammonia -lyase** gene2 (PSPAL2-FL, -2196 to +110) **promoter** was dissected by deleting in a series and fused to the coding region of the reporter gene encoding beta-glucuronidase (GUS). The constructed chimeric promoters designated as PSPAL2-FLd1 (-1486 to +110), PSPAL2-FLd2 (-966 to +110), PSPAL2-FLd3 (-594 to +110) and the full-length **promoter** PSPAL2-FL (-2196 to +110) were used to transform tobacco plants by the Agrobacterium-mediated leaf disk method. Histochemically, GUS expression of the PSPAL2 **promoter** was examined in mature leaves of these transgenic tobacco leaves inoculated with pathogenic and non pathogenic fungi. GUS expression was induced by inoculation with a non pathogen, **Phytophthora** capsici, as detected by a very clear expression zone around the hypersensitive response (HR) area, especially in the transformants of PSPAL2-FL and PSPAL2-FLd1. However, on leaves inoculated with a pathogen, P. nicotianae, only weak and hazy colorations were detected around the inoculation site even in the transformant of PSPAL2-FL. Moreover, wounding mature leaves with a sterile razor blade also triggered remarkable expression around the wounded sites, especially in the transformant of PSPAL2-FL. We suggest that PSPAL2 **promoter** expression in transgenic tobacco is induced not only by fungal ingression but also by wounding.

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STN INTERNATIONAL SESSION SUSPENDED AT 11:43:00 ON 21 MAY 2004